

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.: 10/585,904 **ART UNIT:** 3752
APPLICANT: Royce McKim **EXAMINER:** Davis D. Hwu
FILING DATE: May 7, 2007
TITLE: Automatic Stove Top Fire Suppression Module

DECLARATION UNDER 37 C.F.R. §1.132

I, Royce McKim, hereby declare as follows:

1. I have personal knowledge of the facts stated herein. If called upon I would and could competently testify to these facts.
2. I am an inventor named in the above-identified patent application;
3. I received a Bachelor of Science degree in Mathematics and Industrial Technology in 1965 from East Texas State University in Commerce, Texas.
4. I have forty (40) years of working experience in designing and developing mechanical and processing equipment. I am presently employed as an engineer at Pratt & Whitney, a division of United Technologies Corporation. I have worked at Pratt & Whitney in this capacity or a similar capacity for six (6) years.
5. I am a named inventor of U.S. Patent No. 7,639,777, assigned to United Technologies Corporation, relating to patentable subject matter in the technical field of computed tomography systems and methods.
6. I am a named inventor in at least four U.S. patent applications filed by and assigned to United Technologies Corporation. The patent applications relate to subject matter in the technical field of computed tomography systems and methods. The patent

applications are identified below by U.S Patent Application Publication Number and

Title.

- 2009/0272908 X-Ray Detector Assemblies and Related Computed Tomography Systems.
- 2009/0257552 Computed Tomography Systems and Related Methods Involving Multi-Target Inspection.
- 2009/0225954 X-Ray Collimators, and Related Systems and Methods Involving Such Collimators.
- 2009/0213994 Computed Tomography Systems and Related Methods Involving Forward Collimation.
- 2009/0213984 Computed Tomography Systems and Related Methods Involving Post-Target Collimation.

7. I am a joint inventor of the subject matter that is claimed and for which a patent is sought in the present Application. I have read the Office Actions of October 16, 2009 and the Final Office Action mailed February 22, 2010, along with the references cited by the Examiner during prosecution of this Application.

8. I have read the Freedman and Jones references cited by the Examiner in the Final Office Action mailed February 22, 2010.

9. The Freedman reference discloses a fire extinguishing apparatus that uses a rolled flexible sheet with a fire suppressant powder retained between the layers of the roll. In the event of a fire, the roll unwinds under the influence of gravity, and the fire suppressant powder between the layers of the roll falls as the roll unwinds thereby dispersing the fire suppressant.

10. I have performed experiments and development activities for the purpose of reducing our invention to practice and for determining the effectiveness of the various stove-top fire suppression devices. In response to rejection of the claims in the pending

application as being unpatentable in view of the Freedman reference, I tested a stove top fire suppression module having a flexible sheet configured to disperse a fire suppression agent, wherein the flexible sheet is folded into multiple layers such that the layers overlap, as claimed. In response to rejection of the claims in the pending application as being unpatentable in view of the Freedman reference, I also tested a stove top fire suppression module having a flexible sheet configured to disperse a fire suppression agent, wherein the flexible sheet is rolled into a roll, similar to what is taught by Freedman. I tested a fire suppressant device including flexible sheet is folded into multiple layers about four (4) times and a fire suppressant device including rolled flexible sheet about four (4) times.

11. Based upon my education and experience as an engineer, and based upon experimentation and development activities I have performed, I determined that the dispersal pattern of a powder fire suppressant is a critical factor for consistently extinguishing a fire. The fire suppressant powder should spread evenly over a stove-top area beneath the container.

12. Based upon my education and experience as an engineer, and based upon experimentation and development activities I have performed, I found that pressure on the powder fire suppressant during storage will cause the powder suppressant to clump and not disperse uniformly when released. Reducing or eliminating the occurrence of clumps in the fire suppression agent increases the uniformity of the dispersion of the fire suppression agent.

13. Based upon my education and experience as an engineer, and based upon

experimentation and development activities I have performed, it is my belief that rolling the fire suppression powder into a roll compresses the powder causing it to bind together into clumps to a greater extent than more so than when the fire suppressant powder is stored between folded layers. A roll provides only a very small horizontal area at the bottom and top of the roll where the powder is supported. The roll must be wound sufficiently tight to maintain the powder in the roll all the way around before it is deployed.

14. Based upon my education and experience as an engineer, and based upon experimentation and development activities I have performed, I found that when a flexible sheet is folded into multiple layers, it tends to distribute the fire suppressant powder first to one side and then to the other side as it drops and unfolds, thereby spreading the fire suppressant powder over a broader area and distributing it more uniformly than when the fire suppressant powder drops from an unwinding roll as taught by Freedman. I believe that the powder between the folder layers is less compressed than the powder in a roll because the folded layers provide horizontal surfaces to support the suppressant powder without requiring pressure to hold the powder in place.

15. Freedman shows the use of two rolls on opposite sides of the stove. Freedman apparently uses two rolls because the roll drops the fire suppressant on one side of the roll as it unwinds. The claimed folded sheet can be positioned in the center of the cooking are because the fire suppressant spreads in different directions as the folds unfold.

16. Based upon my education and experience as an engineer, and based upon

experimentation and development activities I have performed, a stove top fire suppression module having a flexible sheet configured to disperse a fire suppression agent, wherein the flexible sheet is folded into multiple layers such that the layers overlap disperses the fire suppression agent more uniformly and over a broader area than a flexible sheet that is rolled into a roll as taught by Freedman. Spreading the fire suppression agent more uniformly and over a broader area provides an improved fire suppression capability. The improved fire suppression capability includes a greater likelihood that the fire suppression device will completely extinguish a fire that triggers the device without causing splashing of material on the stove.

17. The following two pictures (Exhibits A and B) were taken during and after a trial run of a stove top fire suppression module having a flexible sheet configured to disperse a fire suppression agent, wherein the flexible sheet is rolled into a roll, similar to what is taught by Freedman. The first photograph (Exhibit A) shows a large mass of fire suppression agent falling primarily on only one of the two pans, leaving the other pan with a potentially inadequate covering of fire suppression agent. The second photograph (Exhibit B) shows clumping of the fire suppression agent that was released from the flexible sheet that was rolled into a roll, similar to what is taught by Freedman.



Exhibit A

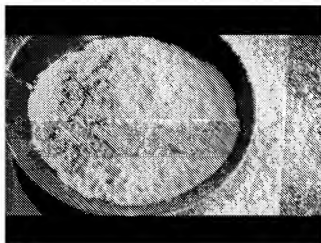


Exhibit B

18. The following two pictures (Exhibits C and D) were taken during and after a trial run of a stove top fire suppression module having a flexible sheet configured to disperse a fire suppression agent, wherein the flexible sheet is folded into multiple layers

such that the layers overlap, as claimed. The first photograph (Exhibit C) shows the fire suppression agent falling on both of the pans with a more even distribution than is shown in Exhibit A using a flexible sheet rolled into a roll. The second photograph (Exhibit D) shows much less, if any, clumping of the fire suppression agent that was released from the folded flexible sheet compared to the clumping, as shown in Exhibit B, of the fire suppression agent released from the flexible sheet that was rolled into a roll.

Exhibit C

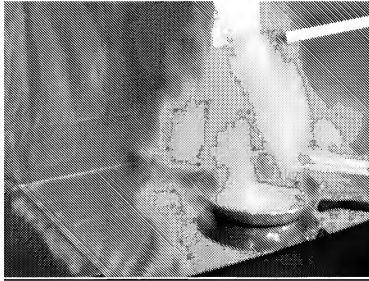


Exhibit D



19. UL300A, a standard for fire suppressant devices, requires that operation of the suppressant cause no splashing of oil as evidenced by the presence of drops of oil on the surrounding surface area.

20. Based upon my education and experience as an engineer, and based upon experimentation and development activities I have performed, I believe that a fire suppressant device having a flexible sheet that is folded into multiple layers will be able to pass UL300A, and I believe that a fire suppressant device having a flexible sheet that is rolled up will not be able to pass UL300A. Because the rolled device disperses the powder less thoroughly, the rolled device is more likely to cause splashing of oil in the cooking pan by letting clumps of suppressant fall into the cooking pan.

21. I declare that all statements made herein are of my own knowledge and are true. Further, all statements made on information and belief are believed to be true; and these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the

Attorney Docket No. RM030

validity of the application or any patent issued thereon.

Under penalty of perjury, I declare that the foregoing is true and correct this 22
day of July, 2010 in Austin, Texas, U.S.

Date: 22 day of July, 2010

By


Royce McKim